

APPARATUS AND METHODS FOR PERFORMING PROCESS SIMULATION USING A HYBRID MODEL

Abstract

5 The invention provides an apparatus and methods for performing process
simulation and structural analysis using a hybrid model. For example, a method of the
invention automatically defines a hybrid solution domain by dividing a representation of
a plastic component or mold cavity into two portions – a portion in which a simplified
analysis may be conducted, and a portion in which a more complex analysis is required.
10 The method may use as input any form of CAD data that describes the surface of a
component or mold. Furthermore, the invention provides methods for simulating fluid
flow within a mold cavity by automatically creating a hybrid solution domain,
automatically discretizing the domain, and solving for the distribution of process
variables within the solution domain.

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